NEWZEN CONSULTANTS

NEW TECHNOLOGIES TO INNOVATE

TEST REPORT OF REBOUND HAMMER

W.O No: BBMP/EE/DZ/PD/W.O/02/2022-23, Date:10/05/2022

Name of Work: Development of parks at Manjunathanagara Ramaiah layout and Soap factory Layout in Dasarahalli Zone ward No.14)

Client : Executive Engineer Dasarahalli Division

Contractor : Sri. D.Anand Naidu, Banglore

Consultants : M/s NEWZEN CONSULTANT BANGALORE

Purpose	Kerb Stone	Date of Sampling	24-01-2023
Source	Gym Platform	Sampled by	QC AEE with PMC
Grade	M-15	Date of Testing	24-01-2023
Location	MEI Park Part-4	Tested by	PMC

Non Destructive Test (NDT) Results By Rebound Hammer

Sl.No.	Location	Direction of Hammer Used	Rebound Reading	Avarage Reading	Compressive Strength (N/mm^2) for 28 days
1	MEI Park [Part-4]	Horizontal Direction (HD)	26	23.60	16.00
2			24		
3			24		
4			24		
5			22		
6			22		

Note: The Permissible Compressive Strength 15 N/mm^2 for 28 days

- The Results obtained are satisfactory as per standard requirements.
- The probable accuracy of prediction of concrete strength in a structure by the Rebound Hammer is ± 25%

For Newzen Consultants Bangalore

Proprietor

NEWZEN CONSULTANT BANGALORE, #304, First floor, 6th cross,Gidadakonenahalli, Viswaneedam Post, Bangalore-560091. CELL NO: +91 8792620231, 080 23240187 EMAIL:newzen576@gmail.com

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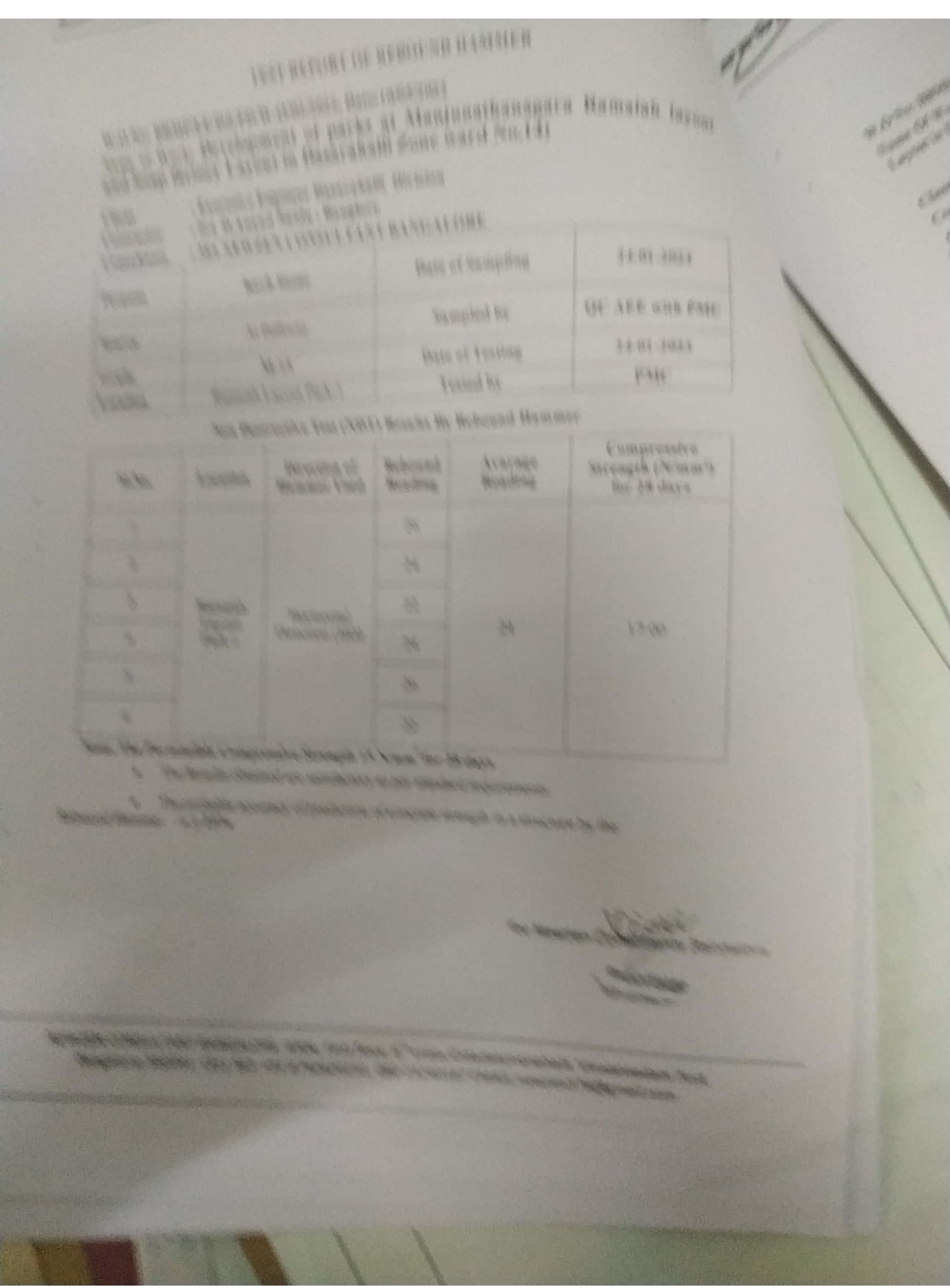

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NEWZEN CONSULTANTS BANGALORE

NEW TECHNOLOGIES TO INNOVATE

TEST REPORT OF REBOUND HAMMER

W.O No: BBMP/EE/DZ/PD/W.O/02/2022-, Date:10/05/2022
Name Of Work : Development of parks at Manjunathanagara Ramaiah layout and Soap factory Layout in Dasarahalli Zone ward No.14)

Client : **Executive Engineer Dasarahalli Division**
Contractor : **Sri. D.Anand Naidu , Banglore**
Consultants : **M/s NEWZEN CONSULTANT BANGALORE**

Purpose	**Kerb Stone**	**Date of Sampling**	**24-01-2023**
Source	Gym Platform	**Sampled by**	**QC AEE with PMC**
Grade	**M-15**	**Date of Testing**	**24-01-2023**
Location	Ramaiah Layout Park-2	**Tested by**	**PMC**

Non Destructive Test (NDT) Results By Rebound Hammer

Sl.No.	Location	Direction of Hammer Used	Rebound Reading	Avarage Reading	Compressive Strength (N/mm²) for 28 days
1	Ramaiah Layout Park-2	Horizontal Direction (HD)	26	25.33	18.00
2			26		
3			24		
4			28		
5			24		
6			24		

Note: The Permissible Compressive Strength 15 N/mm² for 28 days

- The Results obtained are satisfactory as per standard requirements.
- The probable accuracy of prediction of concrete strength in a structure by the Rebound Hammer is **± 25%**

For Newzen Consultants Bangalore

DIVISION

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NEW TECHNOLOGIES TO INNOVATE

TEST REPORT OF REBOUND HAMMER

W.O No: BBMP/EE/DZ/PD/W.O/02/2022, Date:10/05/2022
Name Of Work : Development of parks at Manjunathanagara Ramaiah layout and Soap factory Layout in Dasarahalli Zone ward No.14)

Client : Executive Engineer Dasarahalli Division
Contractor : Sri. D.Anand Naidu , Banglore
Consultants : M/s NEWZEN CONSULTANT BANGALORE

Purpose	**Kerb Stone**	**Date of Sampling**	**24-01-2023**
Source	Gym Platform	**Sampled by**	**QC AEE with PMC**
Grade	**M-15**	**Date of Testing**	**24-01-2023**
Location	MEI Layout Park Part-5	**Tested by**	**PMC**

Non Destructive Test (NDT) Results By Rebound Hammer

Sl.No.	Location	Direction of Hammer Used	Rebound Reading	Avarage Reading	Compressive Strength (N/mm²) for 28 days
1	MEI Layout Park Part-5	Horizontal Direction (HD)	28	25	18.00
2			26		
3			28		
4			24		
5			26		
6			26		

Note: The Permissible Compressive Strength 15 N/mm² for 28 days

- The Results obtained are satisfactory as per standard requirements.
- The probable accuracy of prediction of concrete strength in a structure by the Rebound Hammer is ± 25%

For Newzen Consultants Bangalore

Proprietor

NEWZEN CONSULTANT BANGALORE, #304, First floor, 6th cross,Gidadakonenahalli, Viswaneedam Post, Bangalore-560091. CELL NO: +91 8792620231, 080 23240187 EMAIL:newzen576@gmail.com

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NEWZEN CONSULTANTS BANGALORE

NEW TECHNOLOGIES TO INNOVATE

NC/QC/ W14/2022-23/DP /QC-PB1

Date: 27-01-2023

TEST REPORT

Sub: Testing of Pre-cast Paver Blocks of thickness 60mm.
{Project*: **Development of parks at Manjunathanagara Ramaiah layout and Soap factory Layout in Dasarahalli Zone ward No.14)**
Ref. Material testing/PMC/22-23,
Report Required for: Assistant Executive Engineer,
Dasarahalli Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: **Sri. D.Anand Naidu,Bangalore**

Technical Reference*: IS 15658-2006.
Shape of Cobble = I-Section

PHYSICAL TESTS ON PRECAST PAVER BLOCKS.

1.COMPRESSIVE STRENGTH:

Sl No	Date Of Casting	Date Of Testing	Weight Of Sample	Load KN	Compressive Strength, N/mm^2	Average Compressive Strength, N/mm^2
1	06-06-22	27-01-23	3.48	882	35.00	32.80
2	"	"	3.44	844	33.50	
3	"	"	3.25	781	31.00	
4	"	"	3.45	850	33.75	
5	"	"	3.29	800	31.75	
6	"	"	3.36	813	32.25	

Location: Ramaiah Layout Park-1

For Newzen Consultants Bangalore

Proprietor

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NEWZEN CONSULTANTS BANGALORE

NEW TECHNOLOGIES TO INNOVATE

Date: 27-01-2023

NC/QC/ W14/2022-23/DP /QC-PB2

TEST REPORT

Sub: Testing of Pre-cast Paver Blocks of thickness 60mm.
(Project* **Development of parks at Manjunathanagara Ramaiah layout and Soap factory Layout in Dasarahalli Zone ward No.14)**

Ref: Material testing PMC/22-23,
Report Required for: Assistant Executive Engineer,
Dasarahalli Project Division,
BBMP, Bangalore
Name of the Agency/Contractor*: **Sri. D.Anand Naidu, Bangalore**

Technical Reference*: IS 15658-2006.
Shape of Cobble = I-Section

PHYSICAL TESTS ON PRECAST PAVER BLOCKS.

1.COMPRESSIVE STRENGTH:

Sl No	Date Of Casting	Date Of Testing	Weight Of Sample	Load KN	Compressive Strength, N/mm^2	Average Compressive Strength, N/mm^2
1	06-06-22	27-01-23	3.40	862	34.20	32.30
2	"	"	3.32	832	33.00	
3	"	"	3.21	768	30.50	
4	"	"	3.45	850	33.75	
5	"	"	3.35	812	32.25	
6	"	"	3.22	762	30.25	

Location: Ramaiah Layout Park-2

For Newzen Consultants Bangalore

PROPRIETOR

NEWZEN CONSULTANT BANGALORE, #304, First floor, 6th cross,Gidadakonenahalli, Viswaneedam Post,
Bangalore-560091. CELL NO: +91 8792520221, 080 23240187 EMAIL:newzen575@gmail.com

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QUALITY ASSURANCE REPORT/QUALITY CONTROL REPORT

EE/QA/PR/ 10 /2022-23, DATE: 15.02.2023

Name of Work	:	Development of parks at Manjunathanagara Ramaiah layout and Soap factory Layout in Dasarahalli Zone ward No.14 (Estimated cost – 150.00 Lakhs)
Job Code	:	014-20-000096
Bill No.	:	**1st & Final Bill**
Type of Test Performed	:	Rebound Hammer test As per IS13311-(2)-1992
Materials on which Tests Was Performed	:	1. Kerb stone (M15 grade) 2. Cobble Stone Interlocking pavers 60mm thick
Officers present during inspection	:	1. Sri. Venkateshappa AE – Ward no 14 2. Sri. Jayaraju.K.S. AEE-Quality Assurance
Project Management Consultants	:	**M/s NEWZEN CONSULTANT BANGALORE**
Observations	:	➢ NDT (Rebound hammer test) was conducted in presence of AE (Ward no 14) along with Project Management Consultants representative. ➢ The Rebound Hammer Test was conducted randomly on Kerb (M15) and Cobble Stone Interlocking pavers 60mm thick are recorded by the PMC consultants. ➢ The readings of Rebound Hammer Test are tabulated and analysis of test results done by PMC is here by furnished. ➢ During visual inspection it was intimated by Engineer in charge of work & PMC that items pertaining to gym equipment's & children play equipments in this bill have been executed. ➢ However certificate of warranty & test certificate obtained from the manufacture related to gym equipments & children play equipments. ➢ Neither request for inspection was raised nor file was submitted to QA office during the execution of the work. Therefore QA Division could not inspect the work during progress of work. ➢ This respective bill includes item of **Granite stone** for which test report obtained from Bangalore University for dry density, water absorption, specific gravity, moisture content, tensile strength and Moh's hardness. ➢ The location wise test results are reproduced in the tables shown below.
Test Locations	:	1. Location 1: MEI Park part 4 2. Location 2: Nela Maheshwari park 3. Location3: Ramaiah layout park 1 4. Location4: Ramaiah layout park 2 5. Location 5: MEI Park part 5

15.2.2023
ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ ಉಪ-ವಿಭಾಗ ದಾಸರಹಳ್ಳಿ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

15/2/2023
ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
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ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

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Table-01: Rebound Hammer Test Results for Location-1

Sl. No.	Member	Rebound Hammer Number	Average reading	Compressive Strength (N/mm2) for 28 days	Impact Direction
Sample Tested Location at MEI Park part 4					
1	Kerb Stone (M15)	26	23.66	16.00	Horizontal
2		24			
3		24			
4		24			
5		22			
6		22			

Table-02: Rebound Hammer Test Results for Location-2

Sl. No.	Member	Rebound Hammer Number	Average reading	Compressive Strength (N/mm2) for 28 days	Impact Direction
Sample Tested Location at Nela Maheshwari park					
1	Kerb Stone (M15)	24	24.00	17.00	Horizontal
2		24			
3		22			
4		22			
5		26			
6		26			

Table-03: Rebound Hammer Test Results for Location-3

Sl. No.	Member	Rebound Hammer Number	Average reading	Compressive Strength (N/mm2) for 28 days	Impact Direction
Sample Tested Location at Ramaiah layout park 1					
1	Kerb Stone (M15)	26	24.00	17.00	Horizontal
2		24			
3		22			
4		24			
5		26			
6		22			

Table-04: Rebound Hammer Test Results for Location-4

Sl. No.	Member	Rebound Hammer Number	Average reading	Compressive Strength (N/mm2) for 28 days	Impact Direction
Sample Tested Location at Ramaiah layout park 2					
1	Kerb Stone (M15)	26	25.33	18.00	Horizontal
2		26			
3		24			
4		28			
5		24			
6		24			

Table-05: Rebound Hammer Test Results for Location-5

Sl. No.	Member	Rebound Hammer Number	Average reading	Compressive Strength (N/mm2) for 28 days	Impact Direction
Sample Tested Location at MEI Park part 5					
1	Kerb Stone (M15)	28	25.00	18.00	Horizontal
2		26			
3		28			
4		24			
5		26			
6		26			

15.2.2023

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ ಉಪ-ವಿಭಾಗ ದಾಸರಹಳ್ಳಿ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ ವಿಭಾಗ ದಾಸರಹಳ್ಳಿ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

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Test Report of Cobble Stone Interlocking pavers 60mm thick

Location 3: Ramaiah layout Park 1

Sl No	Date of Casting*	Date of Testing	Weight Of Sample	Load (KN)	Compressive Strength (N/ mm2)	Avg. Value
1	06-06-22	27-01-23	3.48	882	35.00	32.80
2	"	"	3.44	844	33.50	
3	"	"	3.25	781	31.00	
4	"	"	3.45	850	33.75	
5	"	"	3.29	800	31.75	
6	"	"	3.36	813	32.25	

Test Report of Cobble Stone Interlocking pavers 60mm thick

Location4 : Ramaiah layout Park 2

Sl No	Date of Casting*	Date of Testing	Weight Of Sample	Load (KN)	Compressive Strength (N/ mm2)	Avg. Value
1	06-06-22	27-01-23	3.40	862	34.20	32.30
2	"	"	3.32	832	33.00	
3	"	"	3.21	768	30.50	
4	"	"	3.45	850	33.75	
5	"	"	3.35	812	32.25	
6	"	"	3.22	762	30.25	

Test Report for Granite stone Sample

SI NO	Test conducted	Test results	Requirments as per IS:14223,Part-1:1995, Table.1	Reference
1	Dry Density	2.638 g/cc	2.60-2.68	-
2	Water Absorption	0.4%	0.50, max	IS:14223(partI):1995
3	Specific Gravity	2.75	2.75, min	IS9143-1979
4	Moisture Content	0.08%	0.15,max	IS 13030-1991
5	Tensile Strength	142.0 Kg/cm^2	90.0 Kg/cm^2,min	IS 13365(partI)-1998
6	Moh's Hardness	6.5 on a scale of 10	6-7	-

5.2.2023

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಉದ್ಯಾನವನ/ಗುಣನಿಯಂತ್ರಣ ಅಧಿ-ವಿಭಾಗ ದಾಸರಹಳ್ಳಿ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಉದ್ಯಾನವನ/ಗುಣನಿಯಂತ್ರಣ ವಿಭಾಗ ದಾಸರಹಳ್ಳಿ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

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Conclusion:

The file containing **1st & Final Bill** has been submitted for the above work to QA department on 12.01.2023 requesting for spot inspection. Engineers of QA/QC division have visited the work spot on 24.01.2023.

During the inspection, it was understood that the items found in the bill, have been executed by the contractor from the documents provided by PMC team and from the file submitted.

PMC team was instructed to assess the strength of concrete for Kerb stone (M15) by Rebound Hammer Test and to assess Compressive strength of Cobble Stone Interlocking pavers 60mm thick by using UTM Machine in PMC Laboratory .The Rebound hammer test were conducted by PMC in presence of engineer in charge of work.

From the test results furnished by PMC consultants, it is concluded that the results of the samples collected are in accordance with the standards/ specifications mention in the IRC codes. However, the results submitted by the PMC have been reproduced here with for further needful action. The results checked by QA/QC relates only for item tested in the particular location randomly.

Further, QA/QC directs the PMC and Engineer in-charge of the work that all materials used for the work shall be inspected, tested and accepted as per the relevant specifications before incorporation in the work. The frequencies and methods of sampling and testing materials, including those required for definite purpose and not covered by MORT&H specifications shall be in accordance to the relevant IRC or BIS or AASHTO/ASTM/BS standards in order of priority.

This respective bill also includes installation of gym equipments & children play equipments at various locations. As request for inspection was not made during the execution of these items of work, QA division could not inspect during progress of work. However, randomly gym equipments & children play equipments were visually inspected.

It was also instructed to engineer in charge of work to take necessary action to get it certified from competent authority regarding items pertaining to gym equipments & children play equipments certified as per specification.

The concerned Engineer in charge of the work shall follow the direction issued by Chief Commissioner Letter number dated 01.08.2022 and 14.09.2022 and take necessary action as appropriate in accordance with the law.

Note: -

This report by QA/QC is pertaining to the work carried out in **1st & Final Bill** only.

Engineer in charge of work shall display details of work, work code, cost of project, start and completion date, and information of Engineer in charge of work with contact numbers at work spot.

Engineer in charge of work and Agency shall ensure that if any damages or defects occur pertaining to the executed work within the Defect Liability period (DLP) The same shall be rectified immediately on top priority without fail.

15.2.2023

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ ಉಪ-ವಿಭಾಗ ದಾಸರಹಳ್ಳಿ
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ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
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ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

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Location 1: MEI Park part 4

15.2.2023

ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ ವಿಭಾಗ ದಾಸರಹಳ್ಳಿ
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ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

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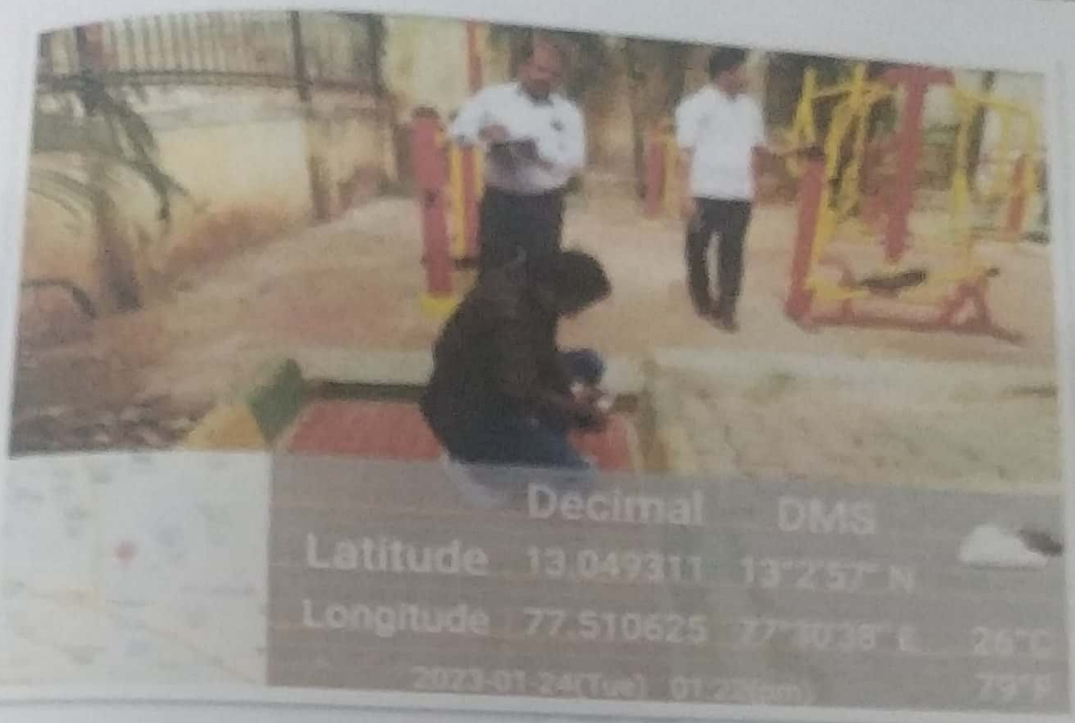
Location 2: Nala Maheshwari park



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